Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
Spectrum Needs of Emergency Response Providers	)	**WT Docket No. 05-157**

COMMENTS OF THE CITY OF NEW YORK

The City of New York ("City") welcomes this opportunity to submit comments in response to the Public Notice concerning the spectrum needs of emergency response providers. At the outset, the City would like to state its appreciation for the Federal Communications Commission's ("FCC's") hard work and commitment in this extraordinarily critical and complex area. Over the last several years, the City has submitted several rounds of comments to the FCC in proceedings on public safety spectrum-related issues. The City has also met on numerous occasions with FCC commissioners and with FCC bureau chiefs, division chiefs and their staffs. In these and in other communications and contacts with the FCC[1], the City has consistently received a fair hearing from key decision makers.

[1] The City of New York, through the Commissioner of the Department of Information Technology and Telecommunications ("DoITT"), is currently a member of NRIC VII.

The City has also met with and testified before Congress. When appearing before the FCC and Congress, the City has sought to articulate a clear and concise set of "requirements" regarding the spectrum needs of our emergency response providers. These requirements can be summarized as follows:

- The resolution of commercial interference in the 800 MHz frequency range[2];

- The availability of the currently allocated 24 MHz of public safety spectrum in the 700 MHz band by 2007, or by a date certain imminently thereafter;

- The allocation of additional broadband spectrum and establishment of innovative subsidy mechanisms to enable governments to participate in auctions for, and/or secondary market leasing of, "non-public safety" spectrum to enable implementation of essential new generation public safety networks; and

- A realistic commitment of Federal funding also to help support implementation of new generation public safety networks.

[2] The 800 MHz interference issue may be somewhat beyond the scope of the Public Notice. However, it should be stated that the City is satisfied that the FCC has set in motion a reasonable approach to resolving this vexing and contentious problem. At the same time, 800 MHz rebanding will be lengthy, complex and potentially burdensome on local resources. Accordingly, the City is carefully monitoring the Transition Administrator's pronouncements and any further FCC orders to ensure that, as promised, the rebanding process does not compromise the continuity of public safety communications or impose unfunded costs on local governments.

"Short-Term" Spectrum Needs and Interoperability

Congress has requested a study of both the "short-term" and "long-term" needs to allocate additional public safety spectrum for local emergency response providers, particularly in relation to improving interoperability.[3] In the "short-term," the City urges that the 24 MHz of spectrum in the 700 MHz band that was allocated to public safety by the FCC in accordance with provisions of the 1997 Balanced Budget Act ("1997 Act") be made available by Congress for public safety use by 2007 or by a date certain imminently thereafter.

As the FCC is aware, this spectrum was authorized by Congress to alleviate public safety spectrum shortages and promote interoperability. Congressional authorization came about largely in response to the findings of the "Final Report of the Public Safety Wireless Advisory Committee" to the FCC and National Telecommunications and Information Administration ("NTIA"). The report, issued on September 11, 1996, concluded that, *"unless immediate measures are taken to alleviate spectrum shortfalls and promote interoperability, Public Safety agencies will not be able to adequately discharge their obligation to protect life and property in a safe, efficient, and cost effective manner."*[4] Regrettably, all these years later, while public safety wireless communications needs have increased so dramatically, first responders and the citizens they serve still await the spectrum that was promised to them so long ago.

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[3] Intelligence Reform and Terrorism Prevention Act of 2004, Pub. L. 108-458, 118 Stat. at 3855-56 (2004).

[4] *Final Report of The Public Safety Wireless Advisory Committee To The Federal Communications Commission, Reed E. Hundt - Chairman, and The National Telecommunications and Information Administration, Larry Irving - Assistant Secretary of Commerce for Communications and Information, September 11, 1996.* (Emphasis added.)

For well over half a century, public safety has relied primarily on land mobile radio ("LMR") technologies to support voice and limited data communications. Even with the rapid emergence technologies that may eventually supplant this near universal reliance, the use of LMR technologies for mission critical voice communications is likely to continue for most local public safety entities well into the foreseeable future.[5] In the LMR environment, interoperable voice communications are frequently established by assigning a common radio frequency band to those emergency personnel who may need to communicate with each other in times of emergency. Thus, for example, the City's radio communications infrastructure currently includes LMR networks on VHF, UHF and 800 MHz "platforms."

Although the City has implemented multi-band systems to promote interoperable voice communications across public safety entities and jurisdictions[6], the City's key focus has been ensuring the availability of its UHF systems to support interoperable communications for first responders and of its 800 MHz system for "secondary" responders in the New York metropolitan area. Indeed, over the last several years, the

[5] Public safety voice communications requires the quality of service that LMR provides. Public safety has also made substantial investments in LMR networks, many of which are at relatively early stages of their "life cycles."

[6] The City's Interoperability Communications Committee ("ICC"), a body established in the aftermath of the September 11 terrorist attacks, meets regularly to evaluate the current state of interoperable communications and works toward developing strategies and solutions for improving and enhancing interoperability. The ICC is chaired by OEM and DoITT, and includes representation by the NYPD, FDNY, the Port Authority of New York and New Jersey, and the Metropolitan Transportation Authority (MTA). The ICC has implemented memoranda amongst the above mentioned agencies for the deployment of TRP-1000 Transportable Radio Interconnect Systems that provide radio interoperability during incidents that require communications across multiple organizations using different radios and different frequencies. The TRP-1000 units allow interagency communications at incident scenes without requiring responding personnel to carry multiple radios. The system package consists of one or more transportable cases and includes multiple radios pre-wired to JPS Communications' ACU-1000 Intelligent Interconnect Unit. The radios, which cover many frequency bands, can be cross-connected through the ACU-1000. The system is only used to support tactical communications at a scene.

City has been aggressively upgrading the very heavily utilized 800 MHz[7] and Channel 16[8] systems to improve reliability and enhance interoperability.

Currently, the City's 800 MHz trunked radio network provides interagency communications to more than 35 city agencies, including public safety and health agencies. Specialized talk groups have been established on the 800 MHz network to provide added levels of interoperability. The principal public safety talk group on the network is the "ALERT" channel, which is dedicated to the City's Office of Emergency Management ("OEM").[9] In the event of an emergency, designated personnel in agencies with access to the ALERT talk group can switch to this channel for information and coordination. Based on the concept of the ALERT channel, other interoperable talk groups have been established, including a healthcare and medical facility talk group to provide interoperable communications among OEM's Health Response Unit, the New

[7] With the assistance of Federal Emergency Management Agency Hazard Mitigation Grant, the City recently upgraded its analog single-site transmit 800 MHz trunked radio system to a digital/analog multi-site (i.e. simulcast) system. The project objectives were to upgrade, secure and harden system to a more robust and redundant platform. The upgraded system, for example, deploys remote alarms and alternate routing to ensure that the system is not impacted by natural or man-made hazards.

[8] The City is currently implementing two distinct UHF radio systems. The *first system* will be a conventional radio system for all of the dispatch voice traffic of the City's Fire Department ("FDNY") and Emergency Medical Services ("EMS"). The critical nature of FDNY dispatch operations has necessitated this independent system. Among the benefits, the new network will have multiple levels of "backup" redundancy will support *portable* dispatch voice communications; and will not rely on commercial phone lines. The *second system* will be a 24-channel trunked radio system, which will handle communications for several City public safety agencies and certain non-dispatch functions of FDNY. A core benefit of implementing this consolidated System is greater interoperability. The System will also help relieve congestion faced by the critical communications needs of the New York area agencies.

[9] Daily roll calls are conducted among City, State, Federal and regional public safety entities to ensure that all lines of communications are open and that participating agencies are prepared for immediate utilization should an emergency arise.

York City Health and Hospitals Corporation and the Greater New York Hospital Association.[10]

Moreover, as stated in the Public Notice, the FCC recently reallocated UHF Channel 16 spectrum in the New York City area for public safety use to promote interoperability among area users. This reallocation is yielding a tremendous benefit to City area emergency response providers and citizens. Per the "New York Metropolitan Area Spectrum Relief Interoperability Channel Memorandum of Understanding," the City utilizes designated Channel 16 "Inter-op" channels to provide interoperable radio communications at the onset of an incident.[11] The Inter-op Channels are used for communications among authorized user agencies in major emergencies and when normally authorized radio channels are not available. Moreover, as described in footnote 7, the FCC's reallocation of Channel 16 has also allowed the City to proceed with a major upgrade to the UHF radio system; which, among other benefits, will enable citywide and regional radio communications coverage and improve interoperable communications among first responders. In addition, the system will be directly linked to the 800 MHz Network, enabling seamless interoperability with OEM.

While there are several other "good news" stories to tell about the City's use of spectrum to upgrade its wireless networks and promote interoperability, the unfortunate fact is that New York City also continues to experience spectrum shortfalls. Upon being given the

[10] This specialized talk group facilitates the real-time exchange of information regarding the availability of medical services during routine events. It also enhances the City's overall preparedness should a mass casualty event occur.

[11] The New York City Police Department maintains the Channel 16 Inter-op System and serves as the dispatch/monitor command/control for the Inter-op Channels within the City's five boroughs. Citywide dispatchers are responsible for monitoring and interacting with the authorized users.

right to finally use the already allocated 24 MHz of public safety spectrum in the 700 MHz band, the City will be in a position to much better plan for a needed expansion of the mission critical voice networks described above, and for the implementation of wideband data applications, as was provided for by the FCC's service rules regarding this spectrum. For example, a portion of the 700 MHz allocation could be used to add capacity to the City's 800 MHz system; which, with approximately 8,000 radios operating on 15 channels, already considerably exceeds the FCC's recommended loading criteria of 100 radios per channel.

Moreover, from the standpoint of the New York City's somewhat unique radio propagation and geographical coverage needs, this 700 MHz band spectrum represents an especially desirable allocation – as this frequency transmits well in "canyon-like" urban environments, provides enhanced in-building penetration and carries radio signals over relatively long distances. Finally, this spectrum would greatly benefit regional interoperability, as 700 MHz/800 MHz multi-band radios are available in the marketplace today. The FCC has also mandated that a significant portion of the 700 MHz public safety spectrum be used for regional interoperability. Accordingly, the FCC adopted a regionally-based process to plan for and manage interoperability. New York City participates in the Region 8 planning committee.[12] Continued delay in the use of 700 MHz spectrum hinders the interoperability planning that has now taken place by Region 8 for more than three years.

[12] As, of course, the FCC is aware, Region 8 consists of Bronx, Kings, Nassau, New York, Orange, Putnam, Queens, Richmond, Rockland, Suffolk, Sullivan, Ulster, Dutchess, and Westchester counties in New York; and Bergen, Essex, Hudson, Morris, Passaic, Sussex, Union, Warren, Middlesex, Somerset, Hunterdon, Mercer, and Monmouth counties in New Jersey.

Regrettably, however, rather than setting a firm date for when this spectrum will be made available to public safety entities, the 1997 Act allows television stations that currently occupy Channels 60-69 to remain on-the-air until the later of December 31, 2006 or until 85% of the households in the relevant market are able to receive digital television signals ("DTV") over-the-air. Consequently, emergency response providers are not only prevented from using this spectrum for an indefinite period of time, but governments are also stymied in their ability to predictably plan for its use. Obviously, government implementation of a comprehensive 700 MHz interoperable network requires exhaustive planning and rigorous processes – including needs assessments, engineering studies, vendor solicitations, vendor negotiations, vendor contracting, equipment purchases, construction, proof-of-concept testing and so forth. There are also the governmental funding processes that need to be considered. None of these planning or funding activities can occur without certainty about the availability date of 700 MHz public safety spectrum. In the absence of such certainty, there should be no illusion that when the 700 MHz spectrum is finally transferred from television broadcasters to public safety use, these networks will very rapidly be "up-and-running."

For these reasons, the City again urges Congress to enable public safety use of this 700 MHz spectrum by 2007. Regardless, however, of whether or not Congress deems 2007 to be the appropriate transition date (which, again, the City strongly urges it to do), it must take immediate steps to establish a firm date for such transition and, thereby, relieve public safety from having to play a guessing game with respect to planning for this spectrum's use. The City further urges that swift action be taken to address this current state of affairs.

"Long-Term" Spectrum Needs and Interoperability

Congress has also requested a study of the "long-term" need for allocation of additional public safety spectrum. Presumably, such spectrum would be used for the transmission of mobile broadband data in new generation public safety networks. Respectfully, however, the City does not view such allocation as a "long-term" need. Rather, the implementation of urgently needed new generation anti-crime and anti-terrorism initiatives immediately requires an allocation of, and supplementary means for public safety to acquire, suitable spectrum. New York and other cities across the country are already moving aggressively at this moment to test and procure mobile broadband networks that will provide emergency responders in the field with access to large file transfers, including maps, building layouts and to massive Federal and state anti-crime and anti-terrorism databases. These networks will also provide, among dozens of other applications, for downloads of full-motion video to and from emergency scenes; continuous environmental monitoring and control; and continuous biological, chemical, nuclear and radiological monitoring and control.

Recently, New York City solicited proposals from systems integrators for the design and implementation of a Citywide Mobile Wireless Network ("Network"). This Network will provide state-of-the-art support to public safety personnel in the NYPD, FDNY, EMS, OEM and other agencies in their performance of both "routine" public safety functions and extraordinary first response needs.[13] Prospective vendors were requested to specify

[13] The Network(s) must support all of the following four "classes" of applications: (1) high-speed public safety; (2) automatic vehicle location; (3) emergency call boxes; and (4) vehicular traffic control. The RFP can be accessed at http://www.nyc.gov/html/doitt/html/miscs/rfp_mobile_wireless.shtml.

the radio spectrum(s) on which they proposed to operate their networks. Unless a City licensed frequency was proposed, prospective vendors were also asked to specify the details, including the cost, of either a direct or third-party lease of licensed spectrum to the City. In July, the City received several provocative proposals, from among the country's top systems integrators, offering a cross-section of technologies and radio spectrum-related approaches. The City expects to imminently award contracts to one or more proposers for a pilot implementation of their proposed solutions. Selected vendors will install their networks in a specified geographic area in the City for a designated period of time. The City's evaluation of the pilot phase will determine whether, and to whom, the City will award a contract for "full" Citywide implementation of the Network.

Because the Citywide Broadband Wireless Network is a current solicitation, and due to confidentiality commitments to proposers, the City is not at liberty to discuss the details of the proposals or the City's opinions as to the relative merits of the various technologies and spectrum-related solutions that have been proposed. (The City has, however, met with the FCC to share information on the general nature of the proposals and on the various spectrum requirements of each potential solution. The City intends to continue that dialogue as the procurement proceeds through the pilot and, potentially, full implementation phases.) However, the City can say that it has observed that there are several technologies, which are currently available or, apparently, will soon be available, that appear to go a long way toward addressing public safety's mobile broadband data needs. These approaches potentially include, for example, mesh network-based solutions, Wi-Fi-based solutions, WiMax-based solutions, commercial wireless technology-based

solutions (including the “sharing” of commercial wireless networks) and “overlays” of multiple such technologies.

However, two points must be emphasized. First, “one size” (i.e. the same technology and radio spectrum-related solution) will not fit all jurisdictions; and, second, the solutions can be very expensive. From technology and spectrum-related standpoints, each implementing jurisdiction (regional, state and/or local) will need to carefully evaluate its particular circumstances from the point of view of its own user and coverage requirements. It should surprise no one that the same technology and spectrum that works well for New York City may not be best suited to Los Angeles, California or to Boise, Idaho.

The Public Notice asks whether or not an additional allocation of spectrum in the 700 MHz band should be granted to emergency response providers. The City is aware, and has been strongly supportive of, the efforts by the Spectrum Coalition for Public Safety to secure at least 10 MHz (5 MHz paired) of additional spectrum in the 700 MHz range to be used to deploy high-speed wireless applications for public safety. Particularly given the propagation characteristics of 700 MHz spectrum, as briefly described above, it is difficult to envision a scenario in which public safety entities could not put such an allocation to extraordinarily good use. Therefore, the City continues, unequivocally, to support this allocation.

It must also be considered that while certain emerging mobile broadband technologies for public safety are best suited to operate on 700 MHz (paired) spectrum, other network

technologies are better suited to various other spectrum bands. It is the City's observation that these bands could include, for example, licensed commercial spectrum in the 1.9 GHz band; licensed Instructional Television Fixed Service ("ITFS") spectrum in the 2.5 GHz band; licensed Advanced Wireless Services ("AWS") spectrum in the 1.7 GHz and 2.1 GHz bands; and/or licensed public safety spectrum in the 4.9 GHz band.[14] What is most essential, however, is that public safety must not be forced into a position – by virtue of not being able to afford the necessary spectrum – of having to implement networks that ultimately will not meet their mission critical needs.

For this reason, the City urges the FCC and Congress to consider the possibility of innovative mechanisms for subsidizing government "acquisition" of public safety spectrum, as needed, for the implementation of broadband data networks. The City would be pleased to contribute to such an effort. One preliminary idea for consideration might be the provision of bidding credits to public safety entities for use in private spectrum auctions. Another possibility might be to earmark a percentage of the proceeds from spectrum auctions for use by governments who seek to lease spectrum in secondary market transactions. Along these lines, current FCC rules allow public safety licensees to lease public safety spectrum only to other public safety entities (or to entities that support

[14] The City applauds the FCC for allocation of the 4.9 GHz band for public safety use and for its recent order on reconsideration concerning emission masks. Whether this 4.9 GHz spectrum is ultimately used by certain public safety entities as the core of their high-speed data networks (by utilizing, for example, a mesh-type technologies), or to supplement other high-speed network topologies (through, for example temporary or point-to-point fixed applications), the 4.9 GHz allocation promises to be an invaluable resource to first responders.

public safety operations).[15] These rules might be "liberalized" to permit public safety entities to lease spectrum to non-public safety entities as long as the proceeds of such transactions are utilized by public safety to "purchase" other, more beneficial spectrum for public safety use. Of course, the City would also welcome additional, potentially more direct, subsidy mechanisms.

Nationwide Broadband Mobile Communications Network

Finally, the Public Notice seeks comment on "a potential nationwide interoperable broadband mobile communications network." As described above, the City anticipates that various localities, states and/or regions throughout the country will have different sets of user and coverage requirements with respect to broadband mobile communications for public safety. Consequently, the City has certain reservations with the concept of a nationwide network insofar as it implies that all public safety entities, throughout the country, would be required to utilize the same technology and the same frequency band to "address" their broadband mobile communications needs. Moreover, such an approach could tend to discourage the very innovations in technologies, and the resulting competition, that public safety is finally benefiting from. Unlike the LMR environment described above, broadband data network interoperability can be readily achieved among public safety entities utilizing different technologies and spectrum bands. Ultimately, the data transmitted over such networks can be shared via a nationwide public-safety-grade data backbone. Therefore, to the extent that the proposal is for the Federal government to take a leading role in establishing the necessary

[15] *See* Promoting Efficient Use of Spectrum Through Elimination of Barriers to the Development of Secondary Markets, Second *Report and Order and Second Further Notice of Proposed Rulemaking*, WT Docket No. 00-230 (2004) at ¶¶ 4, 53.

protocols for interoperability and putting the necessary physical infrastructure in place, the City would certainly be supportive of such an initiative. At the same time, the City believes that a significant portion of the Federal funding that would underwrite a nationwide interoperable broadband mobile communications network could be more productively and efficiently used to help subsidize the local, state and regional mobile broadband networks that are being implemented.

Conclusion

The City of New York appreciates the opportunity to comment in this critical investigation into the spectrum needs of emergency response providers and looks forward to participating in an ongoing dialogue with the FCC and Congress, particularly on the issues surrounding the technology-, spectrum- and funding-related aspects of implementing urgently needed new generation mobile broadband public safety networks.

Respectfully submitted,

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